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| 09/520,032      | 03/06/2000  | Timothy L. Hoopman   | 49933USA6H          | 9385             |

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3M INNOVATIVE PROPERTIES COMPANY  
PO BOX 33427  
ST. PAUL, MN 55133-3427

EXAMINER

DEL SOLE, JOSEPH S

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1722

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|  |                                       |                                       |  |
|--|---------------------------------------|---------------------------------------|--|
| <p align="center"><b>Office Action Summary</b></p> | <b>Application No.</b><br>09/520,032  | <b>Applicant(s)</b><br>HOOPMAN ET AL. |  |
|  | <b>Examiner</b><br>Joseph S. Del Sole | <b>Art Unit</b><br>1722               |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17, 19-21, 25-28, 33-54, 94-96 and 98-111 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 17, 20, 21, 25-28, 33-54, 94-96 and 98-111 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All   b) ☐ Some \* c) ☐ None of:  
     1. ☐ Certified copies of the priority documents have been received.  
     2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 42 is objected to because of the following informalities: **a)** "has a second, different, size" at line 3 of claim 42 must be changed to "has a second, different size--". Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 17, 20, 21, 33-54 and 98-111 rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant (2,108,645) in view of Rochlis (3,312,583).

Bryant teaches a production tool for manufacturing an abrasive article (col 1, lines 1-8), the production tool having a structure having a plurality of adjacent three-dimensional cavities form on a major surface thereof (Fig 1A), wherein each three-dimensional cavity is defined by a substantially distinct and discernible boundary which includes substantially specific dimensions (Figures 1 and 1A), wherein a first three-dimensional cavity has a first shape having specific first dimensions and a second three-dimensional cavity has a second shape having second specific dimensions, wherein each of the three-dimensional cavities has a boundary defined by at least four planar surfaces wherein adjacent planar surfaces of one three-dimensional cavity meet at an edge to define an angle of intersection therebetween (Claims 17, 20, 21, 43), wherein each of the cavities has a single opening (Fig 1A) (All Claims), wherein the production tool is a coating roll (Fig 1, #3) (Claims 20, 21, 33, 34, 35, 36, 37, 38), the cavities each have first, second, third and fourth geometric shapes defining each plurality, with dimensions defining the cavity and first, second, third and fourth pluralities of angles forming the geometric shape (Claims 28, 33, 34, the Examiner notes that a first plurality of cavities having a first geometric shape formed by a first plurality of angles may be identical to a second (or third or forth) plurality of cavities having a second (or third or fourth) geometric shape formed by a second (or third or fourth)

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plurality of angles), the production tool is an engraved roll (page 2, col 1, line 47) (Claim 44).

Bryant fails to teach at least one angle of intersection of the first three-dimensional cavity being different from all angles of intersection of the second three-dimensional cavity (Claims 17, 20, 21), wherein the three-dimensional cavities have pyramidal shapes, wherein each pyramidal shape has planar surfaces which intersection to form a material included angle at a distal end of the pyramid, wherein the material-included angle is a value from  $25^{\circ}$  to  $90^{\circ}$  (Claim 17), at least 10%, 30% or 50% of pairs of adjacent cavities have at least one dimension different between the two cavities of the pair (Claims 25, 26, 27, 36, 37, 38, 39), the angles are different in at least two of the cavities (Claims 28), wherein at least one of the angles of the first plurality is different from all of the angles of the second, third and fourth plurality of angles and at least one of the angles of the second plurality is different from all of the angles of the first, third and fourth plurality of angles and at least one of the angles of the third plurality is different from all of the angles of the first, third and fourth plurality of angles (Claims 33, 34, 35), wherein at least two adjacent cavities have at least one dimension different between the two cavities (Claim 40), wherein a first group of cavities has a first shape and a second group of cavities has a second, different shape (Claim 41), wherein a first group of cavities has a first size and a second group of cavities has a second, different size (Claim 42), wherein at least 10%, 30% or 50% of pairs of adjacent cavities have at least one base edge length different between the two cavities of the pair (Claims 94, 95, 96), wherein the first plurality of cavities each have a first geometric

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shape including a base and first plurality of base edge lengths forming the base of the geometric shape and the second plurality of cavities each have a second geometric shape including a base and second plurality of base edge lengths forming the base of the geometric shape, and wherein at least one of the base edge lengths of the first plurality is different from all of the base edge lengths of the second plurality of base edge lengths (Claim 98, 99, 100 including third and fourth variations additionally) and the engraving roll being metal.

Rochlis teaches a production tool suitable for use in manufacturing an abrasive article (col 1, lines 50-56) which includes a plurality of cavities having geometric shapes, angles and dimensions. At least two of the cavities have different angles. Note that 9 cavities are shown with a first plurality of rectangular cavities, a second plurality of circular cavities, and a third plurality of triangular cavities defining 20 pairs of adjacent cavities, wherein 14 of the pairs have at least one dimension, such as base edge lengths, which is different between the two cavities of the pair. Thus, 70% of the pairs have at least one dimension which is different between the two cavities of the pair. The production tool can be a coating roll (Fig 19) or an etched (engraved) metal roll (col 3, lines 52-63; col 13, lines 15-17 and 62-67). At least one of the angles or base edge lengths of the first plurality is different from all the angles or base edge lengths of the second plurality and the third plurality. At least one of the angles or base edge lengths of the second plurality is different from all the angles or base edge lengths of the first plurality and of the third plurality. At least one angle of intersection of the first three-dimensional cavity being different from all angles of intersection of the second three-

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dimensional cavity (Claims 17, 20, 21), wherein the three-dimensional cavities have pyramidal shapes, wherein each pyramidal shape has planar surfaces which intersection to form a material included angle at a distal end of the pyramid, wherein the material-included angle is a value from  $25^{\circ}$  to  $90^{\circ}$  (Claim 17), at least 10%, 30% or 50% of pairs of adjacent cavities have at least one dimension different between the two cavities of the pair (Claims 25, 26, 27, 36, 37, 38, 39), the angles are different in at least two of the cavities (Claims 28), wherein at least one of the angles of the first plurality is different from all of the angles of the second, third and fourth plurality of angles and at least one of the angles of the second plurality is different from all of the angles of the first, third and fourth plurality of angles and at least one of the angles of the third plurality is different from all of the angles of the first, third and fourth plurality of angles (Claims 33, 34, 35), wherein at least two adjacent cavities have at least one dimension different between the two cavities (Claim 40), wherein a first group of cavities has a first shape and a second group of cavities has a second, different shape (Claim 41), wherein a first group of cavities has a first size and a second group of cavities has a second, different size (Claim 42), wherein at least 10%, 30% or 50% of pairs of adjacent cavities have at least one base edge length different between the two cavities of the pair (Claims 94, 95, 96), wherein the first plurality of cavities each have a first geometric shape including a base and first plurality of base edge lengths forming the base of the geometric shape and the second plurality of cavities each have a second geometric shape including a base and second plurality of base edge lengths forming the base of the geometric shape, and wherein at least one of the base edge lengths of the first

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plurality is different from all of the base edge lengths of the second plurality of base edge lengths (Claim 98, 99, 100 including third and fourth variations additionally) for the purpose of producing pile like products having an almost infinite number of specifically different physical characteristics, presenting many different visual, textural and other effects (col. 1, lines 28-36).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the abrasive article production tool (a pile-like product) of Bryant with the cavities of varied dimensions as taught by the coating roll/ metal engraved/embossed roll of Rochlis because it enables a production tool capable of producing an abrasive article (pile like article) with an almost infinite number of specifically different physical characteristics, presenting many different visual, textural and other effects.

As to claim 17, Rochlis does not disclose the cavities having a material-included angle with a value from 20 to 90 degrees. Note that Rochlis discloses that the cavities can have pyramidal shapes (col. 13, lines 51-58). As to claims 35, 46, 100 and 107, Rochlis discloses a production tool having 3 different types of cavities defining three pluralities or groups of cavities (figs. 21 and 22), but does NOT explicitly disclose a fourth plurality or group of cavities having a fourth different type of cavity. However, Rochlis discloses that the production tool can have different sizes (col. 2, lines 66-70; col. 6, lines 17-22; col. line 61, to col. 10, line 52) and discloses that the production tool can have a plurality of different types of cavities (col. 13, lines 29-35). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was



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made, to modify the cavities of Rochlis to have a material-included angle with a value from 20 to 90 degrees because such an angle would have been found due to routine engineering in finding operable parameters for the apparatus and/or in optimizing the apparatus, In re Aller, 105 USPQ 233 and/or because Rochlis discloses that the cavities can be of different sizes, or to modify the production tool to have four pluralities or group of cavities having four different types of cavity because Rochlis discloses that the production tool can have a plurality of different types of cavities and/or because Rochlis (figs. and 22) discloses a production tool example having not just two but three pluralities or groups of cavities having three different types of cavities.

The limitation "an abrasive article that comprises a major surface having deployed in fixed position thereon first and second three-dimensional abrasive composites, each of said composites comprising abrasive particles dispersed in a binder and having a shape defined by a substantially distinct and discernible boundary which includes substantially specific dimensions, where said first abrasive composite has a shape having specific first dimensions and said second abrasive composite has a second shape having second specific dimensions, wherein each of said abrasive composites has a boundary defined by at least four planar surfaces, wherein each of said abrasive composites has a boundary defined by at least four planar surfaces, wherein adjacent planar surfaces of one composite meet at an edge to define an angle of intersection therebetween, wherein at least one angle of intersection of said first abrasive composite is different from all of the angles of intersection of said second composite" (Claims 17, 20, 21) does not further limit the apparatus claims because 1) it

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is drawn to the product produced not the apparatus used for producing the product and  
2) it does not serve to limit the structure of the apparatus beyond the specific structural limitations of the claims.

The Examiner notes that the limitations of claims 45-54 and 101-111 are reconfigurations of the limitations discussed as taught above. These claims are likewise rejected by the combination of references.

6. Claims 17, 20, 21, 33-54 and 98-111 rejected under 35 U.S.C. 103(a) as being unpatentable over Augustin (4,539,017) in view of Rochlis (3,312,583).

Augustin teaches a production tool for manufacturing an abrasive article (Figures 10 and 11), the production tool having a structure having a plurality of adjacent three-dimensional cavities form on a major surface thereof (Figs 9 and 10), wherein each three-dimensional cavity is defined by a substantially distinct and discernible boundary which includes substantially specific dimensions (Figures 9 and 10), wherein a first three-dimensional cavity has a first shape having specific first dimensions and a second three-dimensional cavity has a second shape having second specific dimensions, wherein each of the three-dimensional cavities has a boundary defined by at least four planar surfaces wherein adjacent planar surfaces of one three-dimensional cavity meet at an edge to define an angle of intersection therebetween (Claims 17, 20, 21, 43), wherein each of the cavities has a single opening (Figs 9 and 10) (All Claims), wherein the production tool is a coating roll (col 6, lines 39-54) (Claims 20, 21, 33, 34, 35, 36, 37, 38), the cavities each have first, second, third and fourth geometric shapes defining each plurality, with dimensions defining the cavity and first, second, third and fourth

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pluralities of angles forming the geometric shape (Claims 28, 33, 34, the Examiner notes that a first plurality of cavities having a first geometric shape formed by a first plurality of angles may be identical to a second (or third or forth) plurality of cavities having a second (or third or fourth) geometric shape formed by a second (or third or fourth) plurality of angles), the production tool is an engraved roll (col 6, lines 39-54) (Claim 44).

Augustin fails to teach at least one angle of intersection of the first three-dimensional cavity being different from all angles of intersection of the second three-dimensional cavity (Claims 17, 20, 21), wherein the three-dimensional cavities have pyramidal shapes, wherein each pyramidal shape has planar surfaces which intersection to form a material included angle at a distal end of the pyramid, wherein the material-included angle is a value from  $25^{\circ}$  to  $90^{\circ}$  (Claim 17), at least 10%, 30% or 50% of pairs of adjacent cavities have at least one dimension different between the two cavities of the pair (Claims 25, 26, 27, 36, 37, 38, 39), the angles are different in at least two of the cavities (Claims 28), wherein at least one of the angles of the first plurality is different from all of the angles of the second, third and fourth plurality of angles and at least one of the angles of the second plurality is different from all of the angles of the first, third and fourth plurality of angles and at least one of the angles of the third plurality is different from all of the angles of the first, third and fourth plurality of angles (Claims 33, 34, 35), wherein at least two adjacent cavities have at least one dimension different between the two cavities (Claim 40), wherein a first group of cavities has a first shape and a second group of cavities has a second, different shape (Claim 41), wherein

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a first group of cavities has a first size and a second group of cavities has a second, different size (Claim 42), wherein at least 10%, 30% or 50% of pairs of adjacent cavities have at least one base edge length different between the two cavities of the pair (Claims 94, 95, 96), wherein the first plurality of cavities each have a first geometric shape including a base and first plurality of base edge lengths forming the base of the geometric shape and the second plurality of cavities each have a second geometric shape including a base and second plurality of base edge lengths forming the base of the geometric shape, and wherein at least one of the base edge lengths of the first plurality is different from all of the base edge lengths of the second plurality of base edge lengths (Claim 98, 99, 100 including third and fourth variations additionally), and the engraving roll being metal.

Rochlis teaches a production tool suitable for use in manufacturing an abrasive article (col 1, lines 50-56) which includes a plurality of cavities having geometric shapes, angles and dimensions. At least two of the cavities have different angles. Note that 9 cavities are shown with a first plurality of rectangular cavities, a second plurality of circular cavities, and a third plurality of triangular cavities defining 20 pairs of adjacent cavities, wherein 14 of the pairs have at least one dimension, such as base edge lengths, which is different between the two cavities of the pair. Thus, 70% of the pairs have at least one dimension which is different between the two cavities of the pair. The production tool can be a coating roll (Fig 19) or an etched (engraved) metal roll (col 3, lines 52-63; col 13, lines 15-17 and 62-67). At least one of the angles or base edge lengths of the first plurality is different from all the angles or base edge lengths of the

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second plurality and the third plurality. At least one of the angles or base edge lengths of the second plurality is different from all the angles or base edge lengths of the first plurality and of the third plurality. At least one angle of intersection of the first three-dimensional cavity being different from all angles of intersection of the second three-dimensional cavity (Claims 17, 20, 21), wherein the three-dimensional cavities have pyramidal shapes, wherein each pyramidal shape has planar surfaces which intersection to form a material included angle at a distal end of the pyramid, wherein the material-included angle is a value from  $25^{\circ}$  to  $90^{\circ}$  (Claim 17), at least 10%, 30% or 50% of pairs of adjacent cavities have at least one dimension different between the two cavities of the pair (Claims 25, 26, 27, 36, 37, 38, 39), the angles are different in at least two of the cavities (Claims 28), wherein at least one of the angles of the first plurality is different from all of the angles of the second, third and fourth plurality of angles and at least one of the angles of the second plurality is different from all of the angles of the first, third and fourth plurality of angles and at least one of the angles of the third plurality is different from all of the angles of the first, third and fourth plurality of angles (Claims 33, 34, 35), wherein at least two adjacent cavities have at least one dimension different between the two cavities (Claim 40), wherein a first group of cavities has a first shape and a second group of cavities has a second, different shape (Claim 41), wherein a first group of cavities has a first size and a second group of cavities has a second, different size (Claim 42), wherein at least 10%, 30% or 50% of pairs of adjacent cavities have at least one base edge length different between the two cavities of the pair (Claims 94, 95, 96), wherein the first plurality of cavities each have a first geometric

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shape including a base and first plurality of base edge lengths forming the base of the geometric shape and the second plurality of cavities each have a second geometric shape including a base and second plurality of base edge lengths forming the base of the geometric shape, and wherein at least one of the base edge lengths of the first plurality is different from all of the base edge lengths of the second plurality of base edge lengths (Claim 98, 99, 100 including third and fourth variations additionally) for the purpose of producing pile like products having an almost infinite number of specifically different physical characteristics, presenting many different visual, textural and other effects (col. 1, lines 28-36).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the abrasive article production tool (a pile-like product) of Bryant with the cavities of varied dimensions as taught by the coating roll/ metal engraved/embossed roll of Rochlis because it enables a production tool capable of producing an abrasive article (pile like article) with an almost infinite number of specifically different physical characteristics, presenting many different visual, textural and other effects.

As to claim 17, Rochlis does not disclose the cavities having a material-included angle with a value from 20 to 90 degrees. Note that Rochlis discloses that the cavities can have pyramidal shapes (col. 13, lines 51-58). As to claims 35, 46, 100 and 107, Rochlis discloses a production tool having 3 different types of cavities defining three pluralities or groups of cavities (figs. 21 and 22), but does NOT explicitly disclose a fourth plurality or group of cavities having a fourth different type of cavity. However,

Rochlis discloses that the production tool can have different sizes (col. 2, lines 66-70; col. 6, lines 17-22; col. line 61, to col. 10, line 52) and discloses that the production tool can have a plurality of different types of cavities (col. 13, lines 29-35). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the cavities of Rochlis to have a material-included angle with a value from 20 to 90 degrees because such an angle would have been found due to routine engineering in finding operable parameters for the apparatus and/or in optimizing the apparatus, *In re Aller*, 105 USPQ 233 and/or because Rochlis discloses that the cavities can be of different sizes, or to modify the production tool to have four pluralities or group of cavities having four different types of cavity because Rochlis discloses that the production tool can have a plurality of different types of cavities and/or because Rochlis (figs. and 22) discloses a production tool example having not just two but three pluralities or groups of cavities having three different types of cavities.

The limitation "an abrasive article that comprises a major surface having deployed in fixed position thereon first and second three-dimensional abrasive composites, each of said composites comprising abrasive particles dispersed in a binder and having a shape defined by a substantially distinct and discernible boundary which includes substantially specific dimensions, where said first abrasive composite has a shape having specific first dimensions and said second abrasive composite has a second shape having second specific dimensions, wherein each of said abrasive composites has a boundary defined by at least four planar surfaces, wherein each of said abrasive composites has a boundary defined by at least four planar surfaces,

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wherein adjacent planar surfaces of one composite meet at an edge to define an angle of intersection therebetween, wherein at least one angle of intersection of said first abrasive composite is different from all of the angles of intersection of said second composite" (Claims 17, 20, 21) does not further limit the apparatus claims because 1) it is drawn to the product produced not the apparatus used for producing the product and 2) it does not serve to limit the structure of the apparatus beyond the specific structural limitations of the claims.

The Examiner notes that the limitations of claims 45-54 and 101-111 are reconfigurations of the limitations discussed as taught above. These claims are likewise rejected by the combination of references.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 17, 20, 21, 25-28, 33-54, 94-96 and 98-111 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 23, 24, 30-32, 89, 90, 92, 93 and 133-148 of copending



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Application No. 09/955,604. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of claims 23, 24, 30-32, and 133-148 of copending Application No. 09/955,604 by eliminating elements thereof because omission of an element and its function in a combination is an obvious expedient if the remaining elements perform the same functions as before, In re Karlson, 136 USPQ 184.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Allowable Subject Matter***

9. Claim 19 is allowed.

***Response to Arguments***

10. Applicant's arguments, see the response file 4/29/04, with respect to the 35 USC 112, 1<sup>st</sup> paragraph rejection have been fully considered and are persuasive. This rejection has been withdrawn.

11. Applicant's arguments with respect to claims 17, 20-21, 25-28, 33-54, 94-96 and 98-111 have been considered but are moot in view of the new ground(s) of rejection.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Joseph S. Del Sole whose telephone number is (571) 272-1130. The examiner can normally be reached on Monday through Friday from 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Wanda Walker, can be reached at (571) 272-1151. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for both non-after finals and for after finals.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Joseph S. Del Sole

J.S.D.  
May 17, 2004